H

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,353	12/09/1999	ARTHUR G. ANDERSON	3569	8754

32681 7590 10/08/2003

PLANTRONICS, INC.
345 ENCINAL STREET
P.O. BOX 635
SANTA CRUZ, CA 95060-0635

EXAMINER	
JACOBSON, TONY M	
ART UNIT	**PAPER NUMBER**
2644	8

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/458,353	ANDERSON ET AL.	
	Examiner	Art Unit	
	Tony M. Jacobson	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 1999* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-72* is/are rejected.

7)☐ Claim(s) *31,34, 35 and 44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *09 December 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

3. Claims 31, 35, 39, and 44 are objected to because of the following informalities: Claim 31 recites "wherein the host adapter adjusts the its filtering and compensation circuitry". It appears that only one of "the" or "its" was intended to be included. Claim 44 recites "The method of claimed 41, wherein ...". The word "claimed" appears to be a typographical error for "claim". Similar typographical errors appears in line 1 of claims 35 and 39. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7, 10, 12, 19, 47, 54, 56, 58, 59, 61, 62, 65, 66, and 70 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 1-7 are directed to two classes of statutory subject matter. The claims attempt to embrace both an apparatus or machine (system) and a process (application), as indicated by the combination of the words "system" and "application" in the preambles of the claims, e.g. "A system application comprising ..." in claim 1. This is precluded by the language of 35 U.S.C. 101, which sets forth the statutory classes of invention in the alternative only. While a single patent may include claims directed to more than one statutory class of invention, no basis exists for permitting a combination of two separate and distinct classes of invention in a single claim. Since it is unclear whether the claims are directed to an apparatus or a process, the claims are indefinite. Since the limitations of the claims seem to correspond to an apparatus, the following prior art rejections are based on an assumption that the claims were intended to indicate an apparatus.

7. Claims 10, 12, and 19 recite "... comprising a host adapter coupled to the headset having for transmitting audio signals ...", resulting in claims that do not

complete a sentence beginning with "What is claimed is:" or the equivalent, causing the meaning of the claims to be indefinite. It is anticipated that Applicant intended to include the word "means" or an equivalent after the word "having", which would result in a complete sentence in each case. The following prior art rejections of these claims are based on this assumption.

8. Claim 47 recites the limitation "at least one of the plurality of performance characteristics" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim. Claims 45 and 46, upon which claim 47 is solely dependent, recite "a performance characteristic", but make no mention of a "plurality of performance characteristics".

9. Regarding claims 54 and 56, the word "may" renders the claims indefinite because it is unclear whether the limitations following the word are part of the claimed invention. See MPEP § 2173.05.

10. Regarding claims 58, 59, 61, 62, 65, and 66, the claims recite lists of limitations without clearly indicating whether the limitations are an amalgamation or alternatives (i.e. "and" or "or"). The following claim rejections are based on the assumption that the word "and" was intended before the last limitation of each list.

11. Regarding claim 70, the claim recites "a memory interface for accessing the memory device in order to read a second set of performance characteristics" without any mention of a first set of performance characteristics. As a result, it is unclear if something was omitted, and the scope of the claim is rendered indefinite.

Claim Rejections - 35 USC § 101

12. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

13. Claims 1-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to two classes of statutory subject matter. The claims attempt to embrace both an apparatus or machine (system) and a process (application), as indicated by the combination of the words "system" and "application" in the preambles of the claims, e.g. "A system application comprising ..." in claim 1. This is precluded by the language of 35 U.S.C. 101, which sets forth the statutory classes of invention in the alternative only. While a single patent may include claims directed to more than one statutory class of invention, no basis exists for permitting a combination of two separate and distinct classes of invention in a single claim.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claim 52 is rejected under 35 U.S.C. 102(b) as being anticipated by Mauney et al. (US 5,734,713).

16. Regarding claim 52, Mauney et al. discloses, generally, a system for storing and accessing information related to a headset, comprising a memory device built into the headset (see abstract).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 1-6, 8-31, 37-39, 41-51, 67-70, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brint et al. (US 4,876,712) in view of Wong et al. (US 5,881,103).

19. Regarding claims 1, 2, 4, 5, 8, 10-13, 15, 17-20, 22-24, 26, 28-31, 67, 68, and 70, Brint et al. discloses a system comprising a headset (12) having a headphone for receiving audio signals, a microphone assembly for transmitting audio signals, and a device implemented within a cable quick disconnect (20) of the headset (in the form of the configuration of connector 20, see column 3, line 56 –column 4, line 8) storing a first set of performance characteristics/preference settings of the headphone and a second set of performance characteristics/preference settings for the microphone assembly of the headset (column 3, lines 22-62); a host adapter (10) coupled to the headset and having performance parameters, coupled to the headset, having means for transmitting audio signals to the headphone of the headset and receiving audio signals from the microphone assembly of the headset, said host adapter having adjustable filtering and compensation circuitry, wherein the host adapter has an interface and processor (column 3, lines 48-62), making it capable of accessing the information stored in the

quick disconnect of the headset in order to read the performance characteristics/preference settings of the headphone and the microphone assembly and, equivalently, filtering and compensation circuitry parameters and settings. (The device (20) of the headset of Brint et al. stores, in encoded form, the information necessary to represent the required performance parameters for the host interface (10), which is also an encoded representation of the performance characteristics of the particular headset. Since the information stored in memory device (20) is selected to cause the system to perform in a preferred manor, the information also represents preference settings, as broadly as claimed. Thus, the several settings stored in device (20) can be variously named "performance characteristics", "performance parameters", and "preference settings".) The host adapter adjusts its performance parameters in accordance with the parameters/settings read from the device, thereby adjusting the audio signals transmitted to the headphone as a function of the first set of performance characteristics/preference settings read from the device and adjusting the audio signals received from the microphone assembly of the headset as a function of the second set of performance characteristics/preference settings read from the device (column 3, lines 1-62). Brint et al. does not disclose that the device (20) of the headset which stores performance characteristics of the headset and, equivalently, performance parameters for the host adapter is a "memory device" in the conventional sense. Wong et al. discloses generally, an electronic device with an equalized audio accessory such as a microphone, speaker, or the like (see abstract, Figs. 1-5, and column 1, lines 14-15) and corresponding method, in the form of an electronic device, which provides

equalization and/or compensation for an audio accessory coupled to the electronic device in accordance with performance parameters stored in a non-volatile memory device contained in the audio accessory (Figs. 2 and 3; column 2, lines 28-67). The electronic device of Wong et al. accesses the memory of the audio accessory through a serial port to read the preference settings, as disclosed at column 3, lines 2-8. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the teachings of Wong et al. to the headset and host adapter of Brint et al. by using a non-volatile memory device located in a cable quick disconnect (as with the storage device of Brint et al.) or any other convenient location; adapting the interface of the host adapter to access the non-volatile memory device through a serial interface; and storing the information stored in the connector configuration of the headset of Brint et al. in the memory device of the headset, in order to allow more information to be stored, to reduce the number of signal conductors required in the host interface connector, to allow the information to be updated after manufacture, or to allow the information to be more easily customized to a particular individual headset.

20. Regarding claim 3, as indicated above regarding claims 1, the device storing performance parameters in the headset system of Brint et al. is implemented within a cable quick disconnect (20) of the headset. Official notice is taken that it was well known in the electronic design arts at the time the present invention was made to place electronic circuitry in any convenient location where space is available, and also to place circuitry of a headset within a headphone of the headset. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to

place the memory of the headset of Brint et al., modified according to the teachings of Wong et al. as described above, in any convenient location, such as within a headphone of the headset.

21. Regarding claim 6, Brint et al. discloses at column 3, lines 6-38 that the preference settings or performance characteristics include volume level and frequency shaping characteristics (inherently comprising treble and bass levels) of the headset. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to select "preferred" levels as the settings.

22. Regarding claims 9 and 16, the memory device (20) of the system of Brint et al., modified according to the teachings of Wong et al. as described above regarding claim 8, stores filtering and compensation circuitry parameters and settings which are determined as a function of the performance characteristics of the headphone and the microphone (see column 1, lines 40-43 of Brint et al. and column 2, lines 52-62 of Wong et al.).

23. Regarding claims 14, 21, 44, 48, 69, and 72, since the host adapter of Brint et al., modified according to the teachings of Wong et al. as described above, is configured to adjust the gain and frequency responses of the transmit (from the microphone assembly) and receive signals (to the headphone) according to the settings stored in memory device of the headset, as disclosed at column 3, lines 6-55of Brint et al., the performance characteristics of the headphone and the microphone assembly stored in the memory device inherently include receive and transmit signal frequency responses and gains.

24. Regarding claims 25 and 27, since the host adapter of Brint et al., modified according to the teachings of Wong et al. as described above, adjusts its receive and transmit gains and frequency shaping characteristics according to the settings stored in the memory device, which are based upon the performance characteristics of the headphone and microphone assembly of the headset (column 3, lines 6-62), the system of Brint et al. stores information representing performance characteristics of the headset, including transmit frequency responses of the headphone, a receive signal gain of the headphone, a transmit frequency response of the microphone assembly, and a transmit signal gain of the microphone assembly. Brint et al. does not disclose that a receive audio level at the headphone, an impedance characteristic of the headphone, a signal-to-noise ratio at the headphone, a transmit audio level of the microphone assembly, an impedance characteristic of the microphone assembly, nor a signal-to-noise ratio of the microphone assembly are stored in the memory device. Although it is necessary to measure a receive audio level at the headphone and a transmit audio level of the microphone assembly in order to determine a receive signal gain of the headphone and a transmit signal gain of the microphone assembly, respectively; by themselves these measurements are likely of limited value, because they depend upon the levels of the driving signals applied. If the levels of the driving signals used in the measurements are known, the receive audio level at the headphone and the transmit audio level of the microphone assembly are inherently stored in the form of the corresponding gain values. Official notice is taken that impedance and signal-to-noise ratio are well-known performance characteristics of audio transducers such as

headphones and microphones, and means for performing impedance and signal-to-noise ratio measurements of audio transducers were also well-known. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include any other performance characteristics of the headset, such as measurements of the impedance characteristics and signal-to-noise ratios of a headphone and microphone assembly in the set of operating characteristics measured, increasing the memory capacity of the headset to carry such data if necessary, so that the host interface can provide a better-matched performance set of parameters to a given headset.

25. Regarding claims 41-43, 45-47, and 49-51, as described above regarding claim 1, the system of Brint et al., modified according to the teachings of Wong et al., performs the method of storing a plurality of performance characteristics of the headphone and the microphone assembly of a headset in a memory device of the headset; accessing the memory device through a serial port and reading the performance characteristic stored in the memory device; and adjusting the audio signals provided (transmitted) to and received from the headset as a function of the performance characteristics read from the memory device, wherein the audio signals are provided to and received from the headset by a host adapter which automatically adjusts the audio signal provided to the headset using filtering and compensation circuitry, before it is provided to the headset, and automatically adjusts the audio signal received from the headset, as a function of (in accordance with) the performance characteristics read from the memory device.

26. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brint et al. (US 4,876,712) in view of Wong et al. (US 5,881,103) as applied to claims 1 and 3 above, and further in view of Roach et al. (US 6,453,042).

27. Regarding claim 7, Roach et al. discloses at column 1, lines 64-67 that the headset adapts to an individual user's preferences, and the disclosure implies generally that the preferences can be updated repeatedly, as desired. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include this capability in the system of Brint et al., modified according to the teachings of Wong et al. as described above, by providing means for the user to update the preference settings as desired.

28. Claims 32-35 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brint et al. (US 4,876,712) in view of Wong et al. (US 5,881,103) and Hendrix (US 4,788,708).

29. Regarding claim 32, as described above, Brint et al. discloses a headset and host adapter, the headset having a device in a cable quick disconnect of the headset storing information corresponding to performance characteristics of the headset, and the host having an interface to retrieve the performance characteristic information from the device and programmable filtering and compensation circuitry configured to adjust the performance parameters of the host according to the information retrieved from the quick disconnect device of the headset. The information is stored in the configuration of

a number of pins in the quick disconnect connector, corresponding to a binary pattern; as opposed to a conventional digital memory device. Wong et al. discloses generally, an electronic device with an equalized audio accessory such as a microphone, speaker, or the like (see abstract, Figs. 1-5, and column 1, lines 14-15) and corresponding method, in the form of an electronic device, which provides equalization and/or compensation for an audio accessory coupled to the electronic device in accordance with performance parameters stored in a non-volatile memory device contained in the audio accessory (Figs. 2 and 3; column 2, lines 28-67). The electronic device of Wong et al. accesses the memory of the audio accessory through a serial port to read the preference settings, as disclosed at column 3, lines 2-8. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the teachings of Wong et al. to the headset and host adapter of Brint et al. by using a non-volatile memory device located in a cable quick disconnect (as with the storage device of Brint et al.) or any other convenient location; adapting the interface of the host adapter to access the non-volatile memory device through a serial interface; and storing the information stored in the connector configuration of the headset of Brint et al. in the memory device of the headset, in order to allow more information to be stored, to reduce the number of signal conductors required in the host interface connector, to allow the information to be updated after manufacture, or to allow the information to be more easily customized to a particular individual headset. In manufacturing the headset of Brint et al., modified according to the teachings of Wong et al. as described above, the step of enclosing the memory device within some part of the headset (such as a

cable quick disconnect, a headphone, or any other obvious location) must inherently be performed. Brint et al. discloses at column 3, lines 53-55 that the desired settings of the signal conditioning circuit will be those which are appropriate for a particular voice communication instrument. Wong et al. teaches at column 4, lines 24-41 that the audio response of the audio accessories (speaker and microphone) are each characterized by applying a sample signal across a desired frequency range is applied to the accessories, the responses to the sample signal (performance characteristics) are measured, and equalizer parameters corresponding to the measured response (performance characteristics) of each of the audio accessories is stored in its non-volatile memory. Hendrix discloses, generally, a system for testing and measuring performance characteristics of headsets as they leave the factory, as well as for follow-up maintenance testing (column 1, lines 30-33). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to measure the performance characteristics of the headset of Brint et al., modified according to the teachings of Wong et al. as described above, during the manufacturing process as taught by Hendrix and further to store the information representing the performance characteristics in the memory at that time.

30. Regarding claim 33, measuring the performance characteristics of the headset using the test system of Hendrix as described above would comprise coupling the headset to a test apparatus as suggested by Fig. 1 of Hendrix; transmitting an audio test pattern from the test apparatus to the headphone of the headset; and measuring the performance characteristics of the headphone as indicated by Fig. 6 of Hendrix.

31. Regarding claim 34, the headset test system of Hendrix measures performance characteristics of a headset, including frequency response of the headphone (Fig. 6), received audio signal level (Fig. 6), and received signal-to-noise level (Fig. 8, step 348). The measurement of received audio signal level, combined with a knowledge of the driving signal level, inherently indicates the received signal gain or, equivalently, a receive sensitivity of the headphone. Official notice is taken that impedance is a well-known important characteristic of audio transducers such as headphones and means for performing impedance measurements of audio transducers were also well-known. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include a measurement of the impedance characteristic of a headphone in the set of operating characteristics measured and stored in the memory device of the headset, increasing the memory capacity of the headset to carry such data if necessary, so that the host interface can provide the best-matched performance parameters to a given headset.

32. Regarding claim 35, following measuring the performance characteristics of the headphone of the headset using the headset test system of Hendrix as described above regarding claims 32 and 33, it would have been obvious to one of ordinary skill in the art at the time the present invention was made to determine a set of filtering and compensation parameters for the host as a function of the measured performance characteristics of the headphone and store the determined parameters in the memory of the headset as taught at column 4, lines 35-41 of Wong et al..

33. Regarding claim 37, measuring the performance characteristics of the headset using the test system of Hendrix as described above would comprise coupling the headset to a test apparatus as suggested by Fig. 1 of Hendrix; transmitting an audio test signal from microphone assembly of the headset to the test apparatus; and measuring the performance characteristics of the microphone assembly as indicated by Fig. 6 of Hendrix.

34. Regarding claim 38, the headset test system of Hendrix measures performance characteristics of a headset, including transmit signal audio level (Fig. 7) and transmit signal-to-noise level (Fig. 9, step 366). The measurement of transmit signal audio level, combined with a knowledge of the driving signal level, inherently indicates a transmit sensitivity of the microphone assembly. Official notice is taken that impedance is a well-known important characteristic of audio transducers such as microphones and means for performing impedance measurements of audio transducers were also well-known. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include a measurement of the impedance characteristic of a microphone assembly in the set of operating characteristics measured, increasing the memory capacity of the headset to carry such data if necessary, so that the host interface can provide the best-matched performance parameters to a given headset.

35. Regarding claim 39, following measuring the performance characteristics of the microphone assembly of the headset using the headset test system of Hendrix as described above regarding claims 32 and 37, it would have been obvious to one of ordinary skill in the art at the time the present invention was made to determine a

second set of filtering and compensation parameters for the host as a function of the measured performance characteristics of the microphone assembly and store the determined parameters in the memory of the headset as taught at column 4, lines 35-41 of Wong et al.

36. Claims 36 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brint et al (US 4,876,712) in view of Wong et al. (US 5,881,103) and Hendrix (US 4,788,708) as applied to claims 33 and 37 above, and further in view of Roach et al (US 6,453,042).

37. Regarding claims 36 and 40, neither Brint et al. nor Wong et al. teaches storing an audio test pattern in the memory device of the headset or audio accessory for future reference. Roach et al. discloses a headset storing user preferences and performance parameters in a non-volatile read-write (flash) memory (column 3, lines 29-31; column 8, line 23 –column 11) of the headset. In the headset of Roach et al., an audio test pattern is stored in memory of a base unit (host adapter). Roach et al. discloses at column 7, lines 17-22 that in alternative embodiments, the headphone base unit may become directly incorporated in the headphone itself. The result would be an audio test pattern stored in the memory of the headset. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to store the audio test pattern in the memory of the headset, according to the teachings of Roach et al. in order to allow the headset to be calibrated independently of a special test apparatus.

38. Claims 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mauney et al. (US 5,734,713) in view of Widin et al. (US 4,992,966) and Gurne et al. (US 5,541,840).

39. Regarding claims 53 and 55, as described above, Mauney et al. discloses a system meeting the limitations of claim 52. Mauney et al. does not disclose that the memory device of the headset stores a production date, a serial number, a service date, nor a type of service performed on the headset. Widin et al. discloses a calibration device and auditory prosthesis (which could comprise a headset) having calibration information and manufacturing information stored within a memory of the prosthesis. As indicated at column 7, lines 42-44, as part of the information stored in the memory of the prosthesis, a serial number, revision level, place of assembly, and date code are included. Gurne et al. discloses an automobile having a computerized controller with a memory and an associated diagnostic tool. At column 9, line 44 –column 10, line 9 Gurne et al. discloses a mode of operation in which service history information of the automobile, including service date and type (column 9, lines 53-58) is stored in the memory of the automobile and later read from the memory. One of ordinary skill in the art at the time the present invention was made would have recognized that this teaching is of value in relation to any apparatus subject to service, having a writable memory. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the teachings of Widin et al. and Gurne et al. to the headset of Roach et al. by storing any useful information such as production date, serial

number, service dates, and types of services performed within the memory of the headset.

40. Further regarding claim 55, the headset system of Roach et al., modified according to the teachings of Widin et al. and Gurne et al. as described above, would perform the method claimed in normal operation

41. Regarding claims 54 and 56, Official notice is taken that it was well known in the art at the time the present invention was made to perform various types of service on headsets, including testing services (routine or otherwise), maintenance services (routine or otherwise), repair services, and replacement of parts services. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to categorize the stored type of service performed according to these well known service types.

42. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roach et al. (US 6,453,042).

43. Regarding claim 57, Roach et al. discloses a method and system for calibrating a headset (701), having a memory device and an associated host adapter (703), according to user preferences (column 1, lines 64-67), the method comprising storing a first set of user-defined preferences for a first user in a headset having a memory device; retrieving the first set of user-defined preferences from the memory when the headset is coupled to a host adapter and used by a first user and thereafter setting performance parameters of the headset in combination with the headset adapter to the

first set of user-defined preferences retrieved from the memory. In normal operation, it would be expected that a second user may use the headset, and re-calibrate the headset to his or her own preferences, resulting in a second set of user-defined preferences being stored in the headset, retrieved from the memory when the headset is coupled to the host adapter and used by a second user, and thereafter the performance parameters of the headset and host being set to the second set of user preferences retrieved from the memory. Roach et al. does not explicitly disclose whether the performance parameters of the system are implemented in the headset or in the host adapter, but does disclose that the settings are stored in the headset (column 2, lines 11-18) and that in the preferred embodiment, the method of the invention is performed on a Jabra 1000 that has a base unit (host adapter) with the necessary calibration and programmability capabilities to make full use of the steps of the invention (column 8, lines 3-6.). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to place the signal processing means in either the host adapter or the headset, as convenient, as a matter of design choice.

44. Claims 57-66 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brint et al. (US 4,876,712) in view of Roach et al. (US 6,453,042) and Liebenow (US 6,530,083).

45. Regarding claims 57, 60 and 63, as described above, Brint et al. discloses a headset and host adapter, the headset having a device in a cable quick disconnect of

the headset storing information corresponding to performance characteristics of the headset, and the host having an interface to retrieve the performance characteristic information from the device and programmable filtering and compensation circuitry configured to adjust the performance parameters of the host according to the information retrieved from the quick disconnect device of the headset. The information is stored in the configuration of a number of pins in the quick disconnect connector, corresponding to a binary pattern; as opposed to a conventional digital memory device. Wong et al. discloses generally, an electronic device with an equalized audio accessory such as a microphone, speaker, or the like (see abstract, Figs. 1-5, and column 1, lines 14-15) and corresponding method, in the form of an electronic device, which provides equalization and/or compensation for an audio accessory coupled to the electronic device in accordance with performance parameters stored in a non-volatile memory device contained in the audio accessory (Figs. 2 and 3; column 2, lines 28-67). The electronic device of Wong et al. accesses the memory of the audio accessory through a serial port to read the preference settings, as disclosed at column 3, lines 2-8. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the teachings of Wong et al. to the headset and host adapter of Brint et al. by using a non-volatile memory device located in a cable quick disconnect (as with the storage device of Brint et al.) or any other convenient location; adapting the interface of the host adapter to access the non-volatile memory device through a serial interface; and storing the information stored in the connector configuration of the headset of Brint et al. in the memory device of the headset, in order

to allow more information to be stored, to reduce the number of signal conductors required in the host interface connector, to allow the information to be updated after manufacture, or to allow the information to be more easily customized to a particular individual headset. The system of Brint et al., modified according to the teachings of Wong et al. as described above, comprises the host adapter (10) (for providing signals to and from a headset having a memory device); a headset (12) with memory for storing information representing the desired performance parameters; and a memory interface within the host adapter for retrieving the performance parameter information when the headset with memory is coupled to the host adapter, thereafter setting a series of performance parameters of the host adapter according to the retrieved performance parameter information in order to adjust the signals provided to and from the headset with memory in accordance with the information representing the desired performance parameters (column 3, lines 1-62). Brint et al. does not disclose that the stored information is based upon user-defined preferences, nor that multiple sets of user-defined preference information are stored in the memory, retrieved, and the performance parameters of the host adapter set according to which particular user is using the headset. Roach et al. discloses a system comprising a headset (701) with memory and an associated host adapter (703), in which a number of settings corresponding to user preferences (column 1, lines 64-67) and performance parameters of the system are determined and stored in the headset (column 2, lines 11-18). It was well known in the audio signal processing art at the time the present invention was made to, in audio devices having programmable performance parameters where

multiple users are anticipated, provide means for storing a plurality of sets of performance characteristics, each set corresponding to the preferences of an individual user. Liebenow discloses a system for providing personalized settings for a plurality of users of an information handling system such as an audio system (column 2, lines 58-64) and telephony systems (column 3, lines 5-10), in which an individual user preference profile is stored for each user of the information handling system, recalled according to which user or users are presently using the system, and corresponding system performance parameters are updated according to the user preferences. Although the system of Liebenow is capable of accommodating a group of users at one time and adapting performance parameters according to a compromise between the individual preferences of the group members, in the simplest case the performance parameters are set directly based upon the preferences of a single user (column 8, lines 30-38). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to provide means for user-defined preferences to be stored in the memory of the headset of Brint et al., modified according to the teachings of Wong et al. as described above, and provide means for the performance parameters of the host to be set according to user-defined preferences stored in the memory of the headset, according to the teachings of Roach et al.; and to provide means for storing and recalling a plurality of user preference profiles corresponding to a plurality of users, according to the teachings of Liebenow in order to produce a headset that is easily adapted between preferences of a plurality of users.

46. Regarding claims 58, 59, 61, 62, and 64-66, Liebenow discloses at column 9, lines 8-14 that in an audio system, a user preference profile may include volume, bass, and treble settings. Official notice is taken that, at the time the present invention was made, headsets having two headphones were notoriously well known and balance level was a notoriously well known user-adjustable parameter of audio systems having multiple output transducers. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to substitute a headset having two headphones for the single-ear headset of Brint et al., and to include balance level among the user-defined preferences (corresponding to host performance parameters) stored in the memory of the headset of Brint et al., modified according to the teachings of Wong et al., Roach et al., and Liebenow as described above regarding claims 57, 60, and 63 to provide a sound output that is balanced between both ears of a user despite possible differences between the responses of the two transducers or between the user's ears.

47. Regarding claim 71, the host adapter of Brint et al., modified according to the teachings of Wong et al., Roach et al., and Liebenow as described above regarding claims 57, 60, and 63, includes filtering and compensation circuitry for adjusting the audio signals transmitted to the headphone of the headset as a function of performance characteristics of the headphone read from memory.

Conclusion

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

49. Young et al. (US 4,879,746) discloses the specific details of the host adapter of the system of Brint et al. referred to in the above rejections.

50. Wimsatt et al. (US 4,975,949) discloses a headset telephone similar to that of Brint et al., having a memory device comprised in connecting jack of the headset and programming compensation circuitry responsive to the setting of the memory device.

51. Huddard et al. (US 5,729,603) discloses a telephone interface adapter (host adapter) that automatically adjusts the gain of the host adapter to the performance characteristics of a connected headset.

52. Mansgold et al. (US 4,425,481) discloses a programmable signal processing device configured to store a plurality of sets of signal processing preferences, selectable by a user.

53. Lucey et al. (US 5,448,646) discloses a headset interface assembly comprising interface circuitry in a quick disconnect adapter of a headset cable for adapting a variety of headsets to various hosts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony M. Jacobson whose telephone number is (703) 305-5532. The examiner can normally be reached on Mon. -Fri. 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

tmj
September 9, 2003

MINSUN OH HARVEY
PRIMARY EXAMINER